



ARTS3295

I bXYfghUbX]b['B Un]; Yfa Ubm`C f][]bgž`Ghfi Wfi fYgž
9I d`UbUh]cb

HYfa `Cby`##`&\$&%

GWXcc`cZ<i a Ub]hYg`UbX`@Ub[i U[Yg`##`I BGK ``5ftg`UbX`GcWU``GWYbWg

7ci fgY`Cj Yfj]Yk

GHJZZ7cbHJW`8YHJ`g

7cbj Ybcfg

B Ua Y	9a Uj`	5j Uj`UVj]m	@cWjhc b	D\cbY
5bXfYk `6YUhtjY	U"VYUhtjY4 i bgk "YXi "Ui	H65 `UbX`Vm Uddc]bha Ybh	A cfj Yb`6fck b &('	H67. - ' ,) !&' & cfj]U`HYUa g

GWXcc``7cbHJW`bZcfa Uhjcb

GWXcc``cZ<i a Ub]hYg`UbX`@Ub[i U[Yg

@cWjhc b. `GWXcc``C ZjWzA cfj Yb`6fck b`6i]X]b[ž@Yj Y``&ž&),

CdYb]b[`<ci fg. `A cbXUm! : f]XUmž- Ua `!) da

D\cbY. `ž*%&`- ' ,) `%*, %

: U! . `ž*%&`- ' ,) ; , +\$)

9a Uj`. [\U`4 i bgk "YXi "Ui](#)

7ci fgY'8YHJ)`g

7fYX]hDc]bhtg`*`

Gi a a UfmicZ\hY'7ci fgY

H\Y'H\]fX'F Y]W\`UghYX'a YfY'mitk Y'j Y'mYUfg'mYh]h'cca g`Uf[Y]b'h\Y'a Ya cfmicZa cXYfb'; Yfa Ubnř
9i fcdYž'UbX']bXYX'h\Y'k cfX" " ð'h\]g'Wēi fgYž'mci 'k]" "hU_Y'U'WcgY`cc_'UhihcgY'hk Y'j Y'mYUfg'UbX'h\Y]f
Z]HJ`Y[UWh'i'Hcd]Wg]bW' XY; Yfa Ubnřg' fgdYW]U`dUhfrc'a cXYfb]mž'h\Y'Wē`UdgY'cZ\hY'K Y]a Uf'F Ydi V]Wž
h\Y'WēbW'dhg'cZ]JgW]ga 'UbX'h\Y']f]Ub]ga ž'h\Y'Z' bW]cb]b['cZ\hY'ghU'UddUfUhi'g]b'h\Y'H\]fX'F Y]W\ž'h\Y
fc'Y'cZ\hY: Ø\fyfž'UgdYWg'cZB Un]]XYc'c[m'UbX'W' h' fU'dc']Wž'UbX'h\Y'cf][]bg'cZ\hY'<c'c'W]i gh']mci 'k]`
'YUfb'\ck 'h'W]h]W`mYI Ua]bY'dc'di 'Uf'fYdfYgYbhU]cbg'cZB Un]; Yfa UbnřUbX'h' h\]b_'UVci h'h\Y
i gYž' bYggž'UbX'h\Y']a]f]h'cbgž'cZj Uf]ci g'h\Y'cfYh]W`UddfcUWYg'h' h\Y'i bXYfghUbX]b['cZgi W\
U'Wēa d'YI '\]gh'f]W`d\Ybca Ybcb"

7ci fgY'@YUfb]b['Ci hWēa Yg

%" 9I d'U]b'h\Y'cf][]bgžYj c'i h'cb'UbX'X]g]bhY[fU]h'cb'cZB Un]; Yfa Ubnř
&" 8]gh]b[i]g\ž'Wēa dUfYž'UbX'Yj U'i UH'X]ZYfYbhdUfUX][a g'Zcf']bh'fdYh]b['h\Y'H\]fX'F Y]W\`
' " 7 cbgfi W'hUf[i a Ybhtg'VmXfUk]b['cb'YI]gh]b[]bh'fdYh] Y'dUfUX][a g'UbX'WēbhYa dcfUfm
\]gh'f]c[fUd\]Wēb'bf'c] Yfg]Yg'UVci h'B Un]; Yfa Ubnř
(" F YZYVh]W]h]W`micb'Uggi a dh'cbg'UbX'fYW]j YX'j]Yk gž']bW' X]b['cbY'g'ck b
) " 7 ca a i b]W]h'Y'ZYW]j Y'm'UbX'dfYgYbhk cf_]b'U'a UbbY'f'h'UhiWēbZ'fa g'h'g'W'c'Uf'm'Wēbj Ybh'cbg
UbX'gi V'YW]h[i]XY']bYg"

HYUW\]b['GhfUH[]Yg`

H\Y'YUfb]b['UbX'hYUW\]b['ghfUH[m]g'XYg][bYX'h' YbWēi fU[Y'gh' XYbhtg'h' Yb[U[Y'k]h'XYVUH'g'UVci h
B Un]; Yfa UbnřXYj Y'cd]b['h\Y]f'W]h]W`g_]`g'h'fci [\ 'a i 'h]d'Y'a cXYg'cZ\hYUW\]b['UbX'UggYgga Ybh'

@YW]h' fYg'Wēa V]bY'U'\]gh'f]W`k]h'U'gmghYa U]h]WUddfcUW\ h' h\Y' []j Yb'h'cd]WcZU'k YY_" 5Xcdh]b['U
fci [\ 'm'W'fc'bc'c[]W]UddfcUW\ h\Y'Z'W'g']g'cZ'Y'b'h\Ya U]h]W']XYc'c[m'UYgh'Yh]Wg' / [c] Yfb'UbWV' /gcW]Už
[YbXYfž'UbX'fUW' 'dc']W]Ygž'Yh'W'K \]Y'gca Y'XY[fY'Y'cZVUW\ [fci bX'_'bck' YX[Y']g'Uggi a YXž'_Ym
XYj Y'cda Ybhtg'UbX'h' fb]b['dc]bhtg'k]`VY'fYj]Yk YX"<ck Yj Yfž'h\Y'df]bW]dU'Z'W'g']g'cb'X]ZYfYbh
]bh'fdYh]h'cbg'UbX'dYfgdYW]j Yg'cb'h\Y'H\]fX'F Y]W\ž'fYZYW]b['h\Y'Yj c'i h'cb'cZ\hY'\]gh'f]c[fUd\micZB Un]
; Yfa Ubnř'@YW]h' fYg'dfcj]XY'h\Y'Z'Ua Yk cf_'Z'f'fYUX]b[g'X]gW'ggYX']b'h\Y'h' h'cf]U'g" H\Y'h' h'cf]U'g'fYj c'j Y
Ufci bX'gYWēbXUfm'UbX'df]a Ufm'hYI h]"

5ggYgga Ybh

5ggYgga YbhHUg_g

5ggYgga YbhHUg_	K Y][\h	8i Y'8UHŸ	Gh XYbh@YUfb]b[Ci hWta Yg'5ggYggYX
K f]hYb'fYgdcbgYg'hc fYUX]b[g'	' \$i	\$(# \$ ' # & \$ % ' UbX' & # \$ (# & \$ % ž \$, . \$ \$ ' DA	&ž' ž' (ž)
h!WUgg'HYgh	' \$i	\$%# \$ (# & \$ % % \$. \$ \$ ' 5A	%ž' &ž' (ž)
F YgYUfW'9ggUmi	(\$i	\$' # \$) # & \$ % \$, . \$ \$ ' DA	&ž' ž)

5ggYgga Ybh8YHU]`g

5ggYgga Ybh% 'K f]hYb'fYgdcbgYg'hc'fYUX]b[g

GhUfhXUHŸ. 'Bch5dd`]WUV'Y

@Yb[h. ' &) \$ ' k cfXg'l ') 'cj Yf'hY'Wti fgY'cZhY'hYfa

8YHU]`g.

Gh XYbŸ'k f]h'g]l' fYgdcbgYgžYUW'cZa Ul ja i a ' &) \$ ' k cfXgž'cj Yf'hY'hYfa 'Wtbg]gh]b['cZU'fYgdcbgY'hc'U
ei Ygh]cb'cb'U'fYUX]b['cZU'[]j Yb'k YY_'UbX'U'X]gW'gg]cb'ei Ygh]cb'cZhY]f'ck b"

; YbYfU'ZYXVUW_']b'WUgg" Gh XYbŸ'fYW'j Y'U'a Uf_žU'fi Vf]WUbX']bX]j]Xi U'Wta a YbŸ'cb'hY'Z]fgh]k c
fYgdcbgYgž'UbX'U'a Uf_'UbX'fi Vf]Wcb'hY''UghZci f'fYgdcbgYg"

Gi Va]gg]cb'bc'hYg. '9bhf]Yg'a i ghVY'dcghYX'cb'A ccX'Y'Vm%\$. ' \$'Ua 'cb'hY'XUm'hY'fY'Yj Ubh]i hc]f]U"
9UW'XUm'cZ'UH'gi Va]gg]cb'Zcf'Ub']bX]j]Xi U'Yb'fmk]'Wti bhUg'U'XUm'cZ'UH'gi Va]gg]cb'Zcf'hY'k \c'Y
UggYgga Ybh]hYa ž'k]h'd

%

%%

%

ei Yghjcbg'UFY'XYg][bYX'hc []j Y'ghi XYbtg'hY'cddcfh b]mhc'XYa cbghfUHY'hY]f'i bXYfgfUbX]b['cZhY
hYa Ygz'ggi Yg'UbX'XYVUH'g'Wtj YfYX']b'hY'Wt'i fgY'UbX'hc'fYZYWh'cb'hY]f'Uggi a dh]cbg'UbX''YUfb]b["

Gh XYbtg'fYVW]j Y'U'a Uf_'UbX'fi Vf]W'; YbYfU'ZYXVUW_]b'WUgg'cf'j]U'A ccX'Y"

5XX]h]cbU'XYHJ]`g.

H\Y'hYghfU_Yg'd'UW'cb']bY'Xi f]b['gYa]bUf'\ci f']b'k YY_' +žH\i fgXUmž%'5df]žVYfk YYb - 'UbX'%'\$Ua "

Hi fb]h]b'gYH]b[. H\]g'Ugg][ba Ybh]g'gi Va]hYX'h'fci [\ 'Hi fb]h]b'UbX'ghi XYbtg'Xc'bcghYY'Hi fb]h]b
g]a]Uf]mifYdcfmg"

5ggYgga Ybh' . 'F YgYUfW' '9ggUm

GHUfhXUH'. Bch5dd]WV'Y

@Yb[h. '&ž\$\$\$'k cfXg

8YHJ]`g.

Gh XYbtg'k f]h'Ub'YggUmcZ&ž\$\$\$'k cfXg'VUgYX'cb']bXYdYbXYbh'fYgYUfW"

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

H\Y`YggYbh]U`k YY_`mfYUX]b[g`k]`VY`Uj U]UV`Y`Y`YWfcb]W]`mh\fc i [\ `@Y[Ubhc#A ccX`Y"

F YWca a YbXYX`F Ygci fWg

H]a `?]f_žBUn]; Yfa UbmžBYk `Mcf_`DU`[fUj Y`A UWA]`Ubž&\$\$*"

5j U]UV`Y`h\fc i [\ `hY`"]VfUfmWU]c[i Y`UbX`Zcf`di fWUgY`Uh\hY`WJa di g`Vcc_g]cfY"

7ci fgY`9j U`i Uh]cb`UbX`8Yj Y`cda Ybh

: cfa U`ZYXVUW_`Zca`ghi XYb]g`k]`VY`Wc`"YWYX`j]U`a m9I dYf]YbW`UbX`k]`VY`i gYX`hc`]a d]c] Y`Z hi fY]hYfU]cbg`cZ]g`Wc`i fgY`" `Zcfa U`ZYXVUW_`]g`U`gc`j Yfmk Y`Wca Y"

Gi Va]gg]cb`cZ5ggYgga YbhiHUg_g

Hi fb]h]b`Gi Va]gg]cb

≠mci`YbWci`bHYf`U`dfcV`Ya`k` \Yb`UHYa`dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhiHfci`[`\`Hi`fb]h]bzd`YUgY`
HY`Yd\cbY`9I`HYfbU`Gi`ddcfhcb`-`,`)`"``"``%cf`Ya`Uj`hYa`icb`YI`HYfbU`HY`hgi`ddcfh4`i`bgk`"YXi`"Ui`""Gi`ddcfh`
`lci`fg`UfY`,`.\$\$Ua`-`-%\$.\$\$da`icb`k`YY`XUmg`UbX`-`.\$\$Ua`-`).\$\$da`icb`k`YY`YbXg`f1`*)`XUmg`U`mY`Uf2`≠mci`
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhiXi`Y`hc`U`ZU`ihk`]h`Hi`fb]h]b`mci`ia`UmUdd`mZc`f`Ub`YI`HYbg]cbz`Vi`hmc`i`
a`i`ghfYhU]b`mci`f`h]W`Yhbi`a`VYf`Zca`9I`HYfbU`Gi`ddcfhU`cb[`k`]h`Ubmc`h`Yf`fY`Yj`UbhXcW`a`Ybhtg`L`hc`
]bWi`XY`Ug`Yj`]XYbVW`hc`gi`ddcfhmc`i`f`YI`HYbg]cb`Udd`]W]h]cb`≠mci`Ya`Uj`9I`HYfbU`Gi`ddcfhmc`i`k`j`
Ui`hca`UH]WU`mifYW]j`Y`U`h]W`Yhbi`a`VYfz`Vi`h]Zmci`HY`Yd\cbY`mci`k`j`bYYX`hc`gdYW]Z]WU`mUg`Zc`f`cbY`
Hi`fb]h]b`U`gc`dfcj`]XYg`i`dXUH`g`cb`h`Y]f`gmghYa`ig`hU`h`g`cb`Hk`]HYf`"

;`YbYfU`mz`UggYgga`YbhiHUg_g`a`i`ghVY`gi`Va`]hYX`Y`YWfcb]WU`mj`]U`Y]h`Yf`Hi`fb]h]b`cf`U`A`ccX`Y`
Ugg][`ba`Ybhi`h]b]bg]h]bVW`g`k` \YfY`h`lg`]g`bchidcgg]V`Yz`]hk`]`VY`ghUHYX`cb`mci`f`Wci`fgY`g`A`ccX`Y`g]h`k`]h`
U`HYfbU]h]`Y`gi`Va`]gg]cb`XYhU]g`"

:`cf]bZcfa`Uh]cb`cb`\ck`hc`gi`Va`]hUgg][`ba`Ybhtg`cb]bY`j`]U`A`ccX`Y`. \hhdg.#gh`XYbhi`bgk`"YXi`"Ui`Ack`!
gi`Va`]hUgg][`ba`Ybhta`ccX`Y`"

5 WUXYa]W< cbYgmiUbX`D`U[]Uf]ga

D`U[]Uf]ga `]g`i`g]b[`h`Y`k`c`f`X`g`c`f`]X`Y`U`g`c`Z`c`h`Y`f`g`i`U`b`X`d`f`Y`g`Y`b`h]b[`h`Y`a` `U`g`m`c`i`f`c`k`b`" `#`W`U`b`h`U`_`Y`a` `U`b`m`
Z`c`f`a`g`Z`Z`c`a` `X`Y`]V`Y`f`U`h`Y` `W`X`Y`U`h]b[`h`c` `U`W`W`Y`X`Y`b`h`U` `m`i`W`c`d`m]b[`Z`c`a` `U`g`c`i`f`W` `k`]h`c`i`h`U`W`_`b`c`k` `Y`X[`Y`a` `Y`b`h`

I`B`G`K` `[`f`c`i`d`g`d`U[]Uf]ga `]b`h`c` `h`Y` `Z`c` `c`k`]b[`W`U`h`Y`[`c`f`]Y`g.

- i bXYfgHUbX'mci f'f][\hg'UbX'fYgdcbg]V']hYg'Ug'U'gh XYbhUhl BGK
-

5 WUXYa]WbZcfa Uh]cb

: cf`YggYbh]U`gh XYbh]bZcfa Uh]cb`fY`Uh]b[`tc.

- fYei Ygh]Zcf`YI H`bg]cb/
- `Uh`gi Va]gg]cbg`[i]XY`]bYg/
- fYj]Yk `cZa Uf_g/
- I B GK `<YU`h`UbX`GUZY`midc`]WYg/
- YI Ua]bUh]cb`dfcW`Xi fYg/
- gdYW]U`W`bg]XYfUh]cb`]b`hY`Yj YbhcZ]`bYgg`cf`a]gUXj Ybh fY/
- gh XYbhYei]mUbX`X]gUV`]m/
- UbX`c`hYf`YggYbh]U`UWUXYa]W]bZcfa Uh]cbz`gYY